



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

Address: COMMISSIONER FOR PATENTS

P.O. Box 1450

Alexandria, Virginia 22313-1450

www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/726,102	12/02/2003	Ciprian Agapi	BOC9-2003-0074 (445)	4811
40/987	7590	07/09/2008		
AKERMAN SENTERFITT				
P. O. BOX 3188				
WEST PALM BEACH, FL 33402-3188				
EXAMINER				
COLUCCI, MICHAEL C				
ART UNIT		PAPER NUMBER		
2626				
NOTIFICATION DATE		DELIVERY MODE		
07/09/2008		ELECTRONIC		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

richard.hinson@akerman.com

sarah.scott@akerman.com

svlipl@us.ibm.com

Office Action Summary

Application No.

10/726,102

Applicant(s)

AGAPI ET AL.

Examiner

MICHAEL C. COLUCCI

Art Unit

2626

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4, 6-14 and 16-20 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☐ Claim(s) 1-4, 6-14, and 16-20 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/CDC)
- Paper No(s)/Mail Date ____.

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date ____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: ____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 04/11/2008 have been fully considered but they are not persuasive.

NOTE: Examiner acknowledges that claims 5 and 15 have been cancelled.

Argument 1 (page 10 paragraph 2):

- "With respect to Claim 10, Ehsani does not teach or suggest assigning an individual option wherein the option is supplied by a user during a user-directed creation of a speech recognition callflow, as recited in the amended claim. In a portion related to one cited in the Office Action, Ehsani describes "optimizing [a] phrase-based n-gram parse." (Ehasani, paragraph [0160]; see also paragraph [0162].) This optimizing, however, is not a user-directed process for creating a speech recognition callflow."

Response to argument 1:

Examiner takes the position that Ehsani teaches the building of grammars, wherein a call flow design and editing option is intended for users. Ehsani teaches the user responses in the call flow design are automatically expanded into recognition grammars. A grammar includes the set of user responses to system prompts that the system can recognize and process accordingly. FIG. 5 shows the type of network that needs to be generated to recognize the user response to the systems prompt "What kind of food do you like to eat?" For each user request, the grammar specifies the set of legitimate variants and supplies an

abstract meaning representation (e.g., "request restaurant information"). Note that the system will not recognize speech input that is not explicitly specified in the grammar. If the recognition system allows for probabilistic grammars, the Network Expander can supply frequency and other probabilistic bigram and trigram statistics to build such a grammar ([0223]).

Further, Ehsani teaches an editor task for a user, wherein the grammar designer provides editing functionality at all stages in the design process. Initial call flow designs can be saved, retrieved, and changed in both graphical and text mode. After the network has been expanded, the designer can go back to the initial call flow design and edit the phrase variants retrieved by the system. At this stage, most of the editing activity will consist of eliminating variants that don't fit the pragmatic context, and of completing phrase templates by accessing the supplemental databases provided by the system or by typing in the template fillers directly. The editor also permits review and modification of the meaning representations automatically supplied by the system ([0223]).

Argument 2 (page 11 paragraph 3)

- "More fundamentally, Ehsani fails to provide for the generation of a new grammar, let alone one that is independent of an existing pre-built grammar"

Response to argument 2:

Examiner takes the position that Ehsani teaches that the present invention has a number of significant advantages over existing techniques for designing voice recognition grammars. Most significantly, it automates the most laborious aspects of recognition grammar design, namely, the need to generate, either by anticipation or by empirical sampling, potential variants of responses to any given system prompt. Secondly, it eliminates the need for expensive user data collection and hand coding of recognition grammars. Thirdly, the invention allows developers without specialized linguistic knowledge to design much more complex networks than conventional design techniques can support. In sum, the invention enables a developer to create more complex and better performing systems in less time and with fewer resources ([0025]).

Further Ehsani teaches that the invention is often described above as implemented to generate a recognition grammar for text data representing a form, such need not be the case. The invention can also be used to generate recognition grammars based on text data that enables navigation through, or retrieval of information from, the set of text data. For example, the invention can be used to create a recognition grammar based on an index of this document. A voice recognition system could then be implemented to make use of such a recognition grammar so that, for example, when a user said "Skip to the claims," the voice recognition system would understand and act on that statement by the user ([0248]).

Ehsani also teaches that like the grammar design tool, the system provides a graphical interface for call-flow design and a large database of phrases for enabling the grammars to handle natural variations of user input, e.g., different ways of phrasing a request for information ([0236]).

Examiner takes the position that the user having the option to create a grammar in a call flow design allows for the creation of separate grammars relevant to various tasks, wherein new grammars can be constructed in addition to pre-existing grammars. The user can create grammar entries (i.e. options, such as recognizable requests, date, time, etc.) within a database that do not exist in order to specify a broad range information to handle a call in a flow system, wherein the call flow system was designed by the call flow designer/user.

Argument 3 (page 12 paragraph 3):

- "Moreover, as the above-quoted language reveals, Ehsani does not automatically generate a new grammar to hold the user-supplied new option if the individual option fails to match a recognition phrase or annotation in a pre-built grammar"

Response to argument 3:

Examiner takes the position that Ehsani teaches that the present invention has a number of significant advantages over existing techniques for designing voice

recognition grammars. Most significantly, it automates the most laborious aspects of recognition grammar design, namely, the need to generate, either by anticipation or by empirical sampling, potential variants of responses to any given system prompt. Secondly, it eliminates the need for expensive user data collection and hand coding of recognition grammars. Thirdly, the invention allows developers without specialized linguistic knowledge to design much more complex networks than conventional design techniques can support. In sum, the invention enables a developer to create more complex and better performing systems in less time and with fewer resources ([0025]).

Further Ehsani teaches that the invention is often described above as implemented to generate a recognition grammar for text data representing a form, such need not be the case. The invention can also be used to generate recognition grammars based on text data that enables navigation through, or retrieval of information from, the set of text data. For example, the invention can be used to create a recognition grammar based on an index of this document. A voice recognition system could then be implemented to make use of such a recognition grammar so that, for example, when a user said "Skip to the claims," the voice recognition system would understand and act on that statement by the user ([0248]).

Ehsani also teaches that like the grammar design tool, the system provides a graphical interface for call-flow design and a large database of phrases for enabling the grammars to handle natural variations of user input, e.g., different ways of phrasing a request for information ([0236]).

Examiner takes the position that the user having the option to create a grammar in a call flow design allows for the creation of separate grammars relevant to various tasks, wherein new grammars can be constructed in addition but separately from pre-existing grammars. The user can create grammar entries (i.e. options, such as recognizable requests, date, time, etc.) within a database that do not exist in order to specify a broad range information to handle a call in a flow system, wherein the call flow system was designed by the call flow designer/user.

Argument 4 (page 12 paragraph 3):

- "Ehsani does not generate a new grammar that is independent of the pre-built grammar and automatically constructed to hold the new entry."

Response to argument 4:

Examiner takes the position that Ehsani teaches that the present invention has a number of significant advantages over existing techniques for designing voice recognition grammars. Most significantly, it automates the most laborious aspects of recognition grammar design, namely, the need to generate, either by anticipation or by empirical sampling, potential variants of responses to any given

system prompt. Secondly, it eliminates the need for expensive user data collection and hand coding of recognition grammars. Thirdly, the invention allows developers without specialized linguistic knowledge to design much more complex networks than conventional design techniques can support. In sum, the invention enables a developer to create more complex and better performing systems in less time and with fewer resources ([0025]).

Further Ehsani teaches that the invention is often described above as implemented to generate a recognition grammar for text data representing a form, such need not be the case. The invention can also be used to generate recognition grammars based on text data that enables navigation through, or retrieval of information from, the set of text data. For example, the invention can be used to create a recognition grammar based on an index of this document. A voice recognition system could then be implemented to make use of such a recognition grammar so that, for example, when a user said "Skip to the claims," the voice recognition system would understand and act on that statement by the user ([0248]).

Ehsani also teaches that like the grammar design tool, the system provides a graphical interface for call-flow design and a large database of phrases for enabling the grammars to handle natural variations of user input, e.g., different ways of phrasing a request for information ([0236]).

Examiner takes the position that the user having the option to create a grammar in a call flow design allows for the creation of separate grammars relevant to various tasks, wherein new grammars can be constructed in addition but separately from pre-existing grammars. The user can create grammar entries (i.e. options, such as recognizable requests, date, time, etc.) within a database that do not exist in order to specify a broad range information to handle a call in a flow system, wherein the call flow system was designed by the call flow designer/user.

Argument 5 (page 13 paragraph 4):

- “Accordingly, even when Ehsani is combined with Del Monte, the combination yet fails to teach or suggest a method or system that automatically generates a new grammar independent of a pre-built grammar to contain a user-supplied new option if the new option does not match any element of the pre-built grammar or an associated annotation associated with an element of the pre-built grammar, as recited in amended Claims 1, 11, and 19”

Response to argument 5:

Natural Language Understanding component (component 2) extracts the meaning of the transcribed speech input and translates the utterances specified in the recognition grammar into a formalized set of instructions that can be processed by the application. In most simple systems, this is done via language

interpretation tags that are inserted manually into the grammar in such a way as to reduce the linguistic variants specified in a given recognition grammar to a single command that can be executed by the system. For example, the input variants "I'd like to order <title>," "Do you have <title>;?", and "I'm looking for <title>," are reduced to a single instruction such as <search TITLE> ([0214]).

Examiner takes the position that Ehsani teaches that the present invention has a number of significant advantages over existing techniques for designing voice recognition grammars. Most significantly, it automates the most laborious aspects of recognition grammar design, namely, the need to generate, either by anticipation or by empirical sampling, potential variants of responses to any given system prompt. Secondly, it eliminates the need for expensive user data collection and hand coding of recognition grammars. Thirdly, the invention allows developers without specialized linguistic knowledge to design much more complex networks than conventional design techniques can support. In sum, the invention enables a developer to create more complex and better performing systems in less time and with fewer resources ([0025]).

Further Ehsani teaches that the invention is often described above as implemented to generate a recognition grammar for text data representing a form, such need not be the case. The invention can also be used to generate

recognition grammars based on text data that enables navigation through, or retrieval of information from, the set of text data. For example, the invention can be used to create a recognition grammar based on an index of this document. A voice recognition system could then be implemented to make use of such a recognition grammar so that, for example, when a user said "Skip to the claims," the voice recognition system would understand and act on that statement by the user ([0248]).

Ehsani also teaches that like the grammar design tool, the system provides a graphical interface for call-flow design and a large database of phrases for enabling the grammars to handle natural variations of user input, e.g., different ways of phrasing a request for information ([0236]).

Examiner takes the position that the user having the option to create a grammar in a call flow design allows for the creation of separate grammars relevant to various tasks, wherein new grammars can be constructed in addition but separately from pre-existing grammars. The user can create grammar entries (i.e. options, such as recognizable requests, date, time, etc.) within a database that do not exist in order to specify a broad range information to handle a call in a flow system, wherein the call flow system was designed by the call flow designer/user.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claim 10 rejected under 35 U.S.C. 102(e) as being anticipated by Ehsani et al
USPGPUB 20020032564 A1 (hereinafter Ehsani).

Re claim 10, Ehsani teaches a method for creating speech recognition callflow for an application ([0221]-[0225]), comprising the steps of:

placing a symbolic representation of a prompt into a workspace of a graphical user interface for creating the speech recognition callflow for the application ([0221]-[0225]), said prompt defining a query requesting a value for a variable ([0221]-[0225] & Fig. 4), wherein said placing generates within said application an instruction to present said query to a user ([0024]);

assigning an individual option ([0162]) supplied by the user during user-directed creation of the speech recognition callflow ([0221]-[0225]) and a pre-built grammar ([0031] & Fig. 5) to the symbolically represented prompt ([0221]-[0225]), wherein said assigning generates within said application an instruction to process a speech input responsive to said presented query, using at least one among said pre-built grammar and said new option ([0215]), wherein said pre-built grammar includes phrases

associated with valid values for said variable, and wherein said new option comprises a user-defined phrase associated with a valid value for said variable ([0162])

if the individual option is a potential valid match to a recognition phrase or an annotation in the pre-built grammar, recognizing that the individual option is a potential valid match ([0162]) and responsively configuring the individual option to point to an entry in the pre-built grammar ([0198]); and

if the individual option fails to be a potential valid match to the recognition phrase or the annotation ([0082]) in the pre-built grammar ([0162]), determining that the individual option fails to be a potential valid match and configuring the individual option as a new entry in a new grammar, the new grammar being independent of the pre-built grammar ([0223]) and automatically constructed to hold the new entry ([0162]), the new entry having text corresponding to text of the individual option ([0162]), the text of the new entry being both a recognition string and an associated annotation ([0082]).

NOTE: For prior art purposes, an annotation is construed to be both functionally equivalent and effective as an abbreviation, date, time, and text.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-4, 6-9, 11-14, and 16-20 rejected under 35 U.S.C. 103(a) as being unpatentable over Ehsani et al USPGPUB 20020032564 A1 (hereinafter Ehsani) in view of Del Monte US 5704060 A (hereinafter Del Monte).

Re claims 1, 11, and 19, Ehsani teaches a method for creating a speech recognition application callflow for an application ([0221]-[0225]), comprising the steps of:

placing a symbolic representation of a prompt into a workspace of a graphical user interface for creating the speech recognition callflow for the application ([0221]-[0225])-[0225]), said prompt defining a query ([0221]-[0225] & Fig. 4), requesting a value for a variable, wherein said placing generates within said application an instruction to present said query to a user ([0024]);

attaching to the prompt representation at least one among a pre-built grammar ([0031] & Fig. 5) selected by a user and a user-entered ([0236]) individual new option entered by the user using the graphical user interface during creation of the speech recognition callflow ([0221]-[0225]), wherein said attaching generates within said application an instruction to process a speech input responsive to said presented query using at least one among said pre-built grammar and said new option ([0215]), wherein said pre-built grammar includes phrases associated with valid values for said variable, wherein said new option comprises a user-defined phrase associated with a valid value for said variable ([0162]);

wherein, if the new option does not match any element of the pre-built grammar or an annotation associated with an element of the pre-built grammar, said processor is

programmed to automatically generate a new grammar independent of the pre-built grammar, the new grammar containing said new option ([0221]-[0225] and [0248])

However, Ehsani fails to teach repeating the steps of placing and attaching for each other request to be included in the callflow steps until the speech recognition callflow has been completed (Del Monte col 24 line 56 – col 25 line 18).

Del Monte teaches a text storage and retrieval system where data is added to a list if it is not already present (215) and test conditions such as ranking (212) and threshold comparison (203) are performed. Del Monte also teaches a dictionary matching function 141 that compares words stored in the metafile's word vector table 21 to the list of words stored in the standard and archive dictionary files 35, 36. If a match is found, the dictionary matching function 141 replaces the word in the word vector table 21 with a reference to the dictionary entry containing the word. If a match is not found, the matching function 141 adds the word to the archive dictionary 36, and then replaces the word in the word vector table 21 with a reference to the new word in the dictionary 36. During the dictionary matching process, the word vector table 21 is maintained in a sorted, ascending order, according to the magnitude of the dictionary references.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention the repetition of the steps of placing a symbolic representation into a workspace of a graphical user interface for speech/voice recognition, where the user is queried for information relative to pre-built and new grammar. Repeating a procedure, particularly when the user is directly involved would be necessary to allow a database/grammar to be updated with new user entries, and can terminate when a

users list of information is concluded. A system that allows for current data to be retrieved as well as new data that can become part of a database/grammar would allow for a more robust recognition of speech when the application is performed in or out of edit mode, where a system can learn independently once a user edits the call flow for a voice application accordingly.

Re claims 2, 12, and 20, Ehsani teaches the method of claim 1, wherein the step of attaching the pre-built grammar comprises the step of selecting the pre-built grammar from a list of pre-built grammars ([0244]).

Re claims 3 and 13, Ehsani teaches the method of claim 2, wherein the method further comprises the step of searching the list of pre-built grammars ([0086]) for matches to the user-entered individual new option ([0162]).

Re claims 4 and 14, Ehsani teaches the method of claim 3, wherein if a match exists between a listed pre-built grammar and the user-entered ([0236]) individual new option ([0162]), then the user-entered individual new option ([0244]) points to an equivalent said matching pre-built grammar ([0198]).

Re claims 6 and 16, Ehsani teaches the method of claim 1, wherein the pre-built grammars are selected from the group comprising VoiceXML ([0231]) and custom-built grammars from a library ([0225]).

Re claims 7 and 17, Ehsani teaches the method of claim 1, wherein the method further comprises the step of enabling a customized user selective output ([0225]) of the pre-built grammar ([0244]).

Re claim 8, Ehsani teaches the method of claim 1, wherein the method supports prototyping without knowledge of a grammar structure by a user ([0162]).

Re claims 9 and 18, Ehsani teaches the method of claim 3, wherein if no match exists between the list of pre-built grammars and the user-entered option, then the phrase in said option is added to said pre-built grammar ([0162]).

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure US 6714905 B1, US 5617578 A, US 5940797 A, US 5812977 A, US 6064961 A, US 5903867 A, US 4864501 A, US 5970460 A.

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

Art Unit: 2626

mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael C. Colucci whose telephone number is (571)-270-1847. The examiner can normally be reached on 9:30 am - 6:00 pm, Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richemond Dorvil can be reached on (571)-272-7602. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2626

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Michael C Colucci/
Examiner, Art Unit 2626
Patent Examiner
AU 2626
(571)-270-1847
Michael.Colucci@uspto.gov

/Richemond Dorvil/
Supervisory Patent Examiner, Art Unit 2626